



1

SEQUENCE LISTING

<110> BAUMANN, PETER  
CECH, THOMAS R.

<120> PROTECTION-OF-TELOMERE-1 (POT-1) PROTEIN AND ENCODING  
POLYNUCLEOTIDES

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<140> 09/816,248

<141> 2001-03-26

<160> 45

<170> PatentIn Ver. 2.1

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<211> 118

<212> PRT

<213> Euplotes crassus

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Cys Lys Val Ala Asp Pro Ser Ser Val Ala Lys Gly Gly Lys Leu Asn  
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Thr Val Asn Val Val Phe Phe Ser Gln Asn Phe Glu Asp Leu Pro Ile  
65 70 75 80

Ile Gln Arg Val Gly Asp Ile Val Arg Val His Arg Ala Arg Leu Gln  
85 90 95

His Tyr Asn Asp Ala Lys Gln Leu Asn Val Asn Met Tyr Tyr Arg Ser  
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<212> PRT

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Leu Lys Val Val Asp Pro Ser Leu Tyr Leu Lys Ser Gln Lys Gly Thr  
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Gly Asp Ala Ser Asp Tyr Ala Thr Leu Val Leu Tyr Ala Lys Arg Phe  
65 70 75 80

Glu Asp Leu Pro Ile Ile His Arg Ile Gly Asp Ile Ile Arg Val His  
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 Gly Asp Ala Ser Asp Tyr Ala Thr Leu Val Leu Tyr Ala Lys Arg Phe  
 65 70 75 80  
 Glu Asp Leu Pro Ile Ile His Arg Ala Gly Asp Ile Ile Arg Val His  
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&lt;210&gt; 5

&lt;211&gt; 109

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

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&lt;210&gt; 6

&lt;211&gt; 116

&lt;212&gt; PRT

&lt;213&gt; Schizosaccharomyces pombe

&lt;400&gt; 6

Lys Ile Gly Glu Leu Thr Phe Gln Ser Ile Arg Ser Ser Gln Glu Leu  
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Ile His Leu Phe Ser Lys Gln Gly Asn Asp Leu Pro Val Ile Lys Gln  
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Val Gly Gln Pro Leu Leu Leu His Gln Ile Thr Leu Arg Ser Tyr Arg  
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Pro Asp Phe Ser  
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&lt;210&gt; 7

&lt;211&gt; 3980

&lt;212&gt; DNA

&lt;213&gt; Schizosaccharomyces pombe

&lt;400&gt; 7

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<213> Schizosaccharomyces pombe

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<213> Schizosaccharomyces pombe

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Val Lys Asp Phe Thr Pro Ser Arg Gln Ser Leu His Gly Thr Lys Asp
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Trp Val Thr Thr Val Tyr Leu Trp Asp Pro Thr Cys Asp Thr Ser Ser
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 Pro Phe Gly Arg Phe Ser Ile Arg Cys Ile Leu Trp Asp Glu His Asp  
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 Phe Tyr Cys Arg Asn Tyr Ile Lys Glu Gly Asp Tyr Val Val Met Lys  
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 His Gly Asp Ser Ala Lys Arg Tyr Asn Met Ser Ile Glu Lys Val Asp  
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Ser Tyr Val Trp Met Phe Ala Leu Leu Val Arg Asp Val Ser Asn Val  
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 Ser Ser Lys Ile Gln Pro Cys Asn Leu Ala Asp His Pro Gln Met Thr  
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&lt;210&gt; 10

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&lt;212&gt; DNA

&lt;213&gt; Schizosaccharomyces pombe

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                   180                  185                  190  
 Trp Asp Glu Gln Thr Asn Lys His Lys Asn Gly Glu Leu Leu Ser Thr  
           195                  200                  205  
 Ser Ser Ala Arg Gln Asn Gln Thr Gly Leu Ser Tyr Pro Ser Val Ser  
           210                  215                  220  
 Phe Ser Leu Leu Ser Gln Ile Thr Pro His Gln Arg Cys Ser Phe Tyr  
           225                  230                  235                  240  
 Ala Gln Val Ile Lys Thr Trp Tyr Ser Asp Lys Asn Phe Thr Leu Tyr  
                   245                  250                  255

Val	Thr	Asp	Tyr	Thr	Glu	Asn	Glu	Leu	Phe	Phe	Pro	Met	Ser	Pro	Tyr	
			260					265					270			
Thr	Ser	Ser	Ser	Arg	Trp	Arg	Gly	Pro	Phe	Gly	Arg	Phe	Ser	Ile	Arg	
		275					280					285				
Cys	Ile	Leu	Trp	Asp	Glu	His	Asp	Phe	Tyr	Cys	Arg	Asn	Tyr	Ile	Lys	
	290					295					300					
Glu	Gly	Asp	Tyr	Val	Val	Met	Lys	Asn	Val	Arg	Thr	Lys	Ile	Asp	His	
305					310					315					320	
Leu	Gly	Tyr	Leu	Glu	Cys	Ile	Leu	His	Gly	Asp	Ser	Ala	Lys	Arg	Tyr	
				325					330					335		
Asn	Met	Ser	Ile	Glu	Lys	Val	Asp	Ser	Glu	Glu	Pro	Glu	Leu	Asn	Glu	
			340					345					350			
Ile	Lys	Ser	Arg	Lys	Arg	Leu	Tyr	Val	Gln	Asn	Cys	Gln	Asn	Gly	Ile	
		355					360					365				
Glu	Ala	Val	Ile	Glu	Lys	Leu	Ser	Gln	Ser	Gln	Gln	Ser	Glu	Asn	Pro	
		370				375					380					
Phe	Ile	Ala	His	Glu	Leu	Lys	Gln	Thr	Ser	Val	Asn	Glu	Ile	Thr	Ala	
385					390					395					400	
His	Val	Ile	Asn	Glu	Pro	Ala	Ser	Leu	Lys	Leu	Thr	Thr	Ile	Ser	Thr	
				405					410					415		
Ile	Leu	His	Ala	Pro	Leu	Gln	Asn	Leu	Leu	Lys	Pro	Arg	Lys	His	Arg	
			420					425					430			
Leu	Arg	Val	Gln	Val	Val	Asp	Phe	Trp	Pro	Lys	Ser	Leu	Thr	Gln	Phe	
		435					440					445				
Ala	Val	Leu	Ser	Gln	Pro	Pro	Ser	Ser	Tyr	Val	Trp	Met	Phe	Ala	Leu	
		450				455					460					
Leu	Val	Arg	Asp	Val	Ser	Asn	Val	Thr	Leu	Pro	Val	Ile	Phe	Phe	Asp	
465					470					475					480	
Ser	Asp	Ala	Ala	Glu	Leu	Ile	Asn	Ser	Ser	Lys	Ile	Gln	Pro	Cys	Asn	
				485					490					495		
Leu	Ala	Asp	His	Pro	Gln	Met	Thr	Leu	Gln	Leu	Lys	Glu	Arg	Leu	Phe	
			500					505					510			
Leu	Ile	Trp	Gly	Asn	Leu	Glu	Glu	Arg	Ile	Gln	His	His	Ile	Ser	Lys	
		515					520					525				
Gly	Glu	Ser	Pro	Thr	Leu	Ala	Ala	Glu	Asp	Val	Glu	Thr	Pro	Trp	Phe	
		530				535					540					
Asp	Ile	Tyr	Val	Lys	Glu	Tyr	Ile	Pro	Val	Ile	Gly	Asn	Thr	Lys	Asp	
545					550					555					560	

His Gln Ser Leu Thr Phe Leu Gln Lys Arg Trp Arg Gly Phe Gly Thr  
 565 570 575

Lys Ile Val

<210> 12  
 <211> 1905  
 <212> DNA  
 <213> Homo sapiens

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 actgattatt gctcagttgt aactattgtg gaccagacaa atgtaaaact aacttgcttg 180  
 ctcttttagtg gaaactatga agcccttcca ataatttata aaaatggaga tattgttcgc 240  
 tttcacaggg tgaagattca agtatataaa aaggagactc aggggtatcac cagctctggc 300  
 tttgcatctt tgacgtttga ggggaactttg ggagccccta tcatacctcg cacttcaagc 360  
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 tctactcata tgtcaccgctc ttggacatta ctaaaattgt gtgatgttca gccaatgcag 480  
 tattttgacc tgacttgtca gctcttgggc aaagcagaag tggacggagc atcatttctt 540  
 ctaaagggtat gggatggcac caggacacca ttccatctt ggagagtctt aatacaagac 600  
 cttgttcttg aagggtgattt aagtcacatc catcggtac aaaatctgac aatagacatt 660  
 ttagtctacg ataaccatgt tcatgtggca agatctctga aggttggaag ctttcttaga 720  
 atctatagcc ttcataccaa acttcaatca atgaattcag agaatcagac aatgttaagt 780  
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 cagcattcag atgttatctg tcaatcagaa cctgacgaca gctttccaag ctctggatca 960  
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 tatggatgta aacagtgttc tagtttgaga tccatacaaa atctaaattc cctggttgat 1560  
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 gattctgaca aattcttcca gattccagca tcagaagttc tgatggatga tgaccttcag 1740  
 aaaagtgtgg atatgatcat ggatatgttt tgcctccag gaataaaaaat tgatgcatat 1800  
 ccgtgggttg aatgcttcat caagtcatac aatgtcacia atggaacaga taatcaaatt 1860  
 tgctatcaga tttttgacac cacagttgca gaagatgtaa tctaa 1905

<210> 13  
 <211> 634  
 <212> PRT  
 <213> Homo sapiens

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 Leu Lys Gly Gly Thr Ile Val Asn Val Tyr Gly Val Val Lys Phe Phe  
 20 25 30

Lys Pro Pro Tyr Leu Ser Lys Gly Thr Asp Tyr Cys Ser Val Val Thr  
                   35                  40                  45  
 Ile Val Asp Gln Thr Asn Val Lys Leu Thr Cys Leu Leu Phe Ser Gly  
           50                  55                  60  
 Asn Tyr Glu Ala Leu Pro Ile Ile Tyr Lys Asn Gly Asp Ile Val Arg  
   65                  70                  75                  80  
 Phe His Arg Leu Lys Ile Gln Val Tyr Lys Lys Glu Thr Gln Gly Ile  
                   85                  90                  95  
 Thr Ser Ser Gly Phe Ala Ser Leu Thr Phe Glu Gly Thr Leu Gly Ala  
                  100                 105                 110  
 Pro Ile Ile Pro Arg Thr Ser Ser Lys Tyr Phe Asn Phe Thr Thr Glu  
          115                 120                 125  
 Asp His Lys Met Val Glu Ala Leu Arg Val Trp Ala Ser Thr His Met  
   130                 135                 140  
 Ser Pro Ser Trp Thr Leu Leu Lys Leu Cys Asp Val Gln Pro Met Gln  
  145                 150                 155                 160  
 Tyr Phe Asp Leu Thr Cys Gln Leu Leu Gly Lys Ala Glu Val Asp Gly  
          165                 170                 175  
 Ala Ser Phe Leu Leu Lys Val Trp Asp Gly Thr Arg Thr Pro Phe Pro  
          180                 185                 190  
 Ser Trp Arg Val Leu Ile Gln Asp Leu Val Leu Glu Gly Asp Leu Ser  
   195                 200                 205  
 His Ile His Arg Leu Gln Asn Leu Thr Ile Asp Ile Leu Val Tyr Asp  
   210                 215                 220  
 Asn His Val His Val Ala Arg Ser Leu Lys Val Gly Ser Phe Leu Arg  
  225                 230                 235                 240  
 Ile Tyr Ser Leu His Thr Lys Leu Gln Ser Met Asn Ser Glu Asn Gln  
          245                 250                 255  
 Thr Met Leu Ser Leu Glu Phe His Leu His Gly Gly Thr Ser Tyr Gly  
          260                 265                 270  
 Arg Gly Ile Arg Val Leu Pro Glu Ser Asn Ser Asp Val Asp Gln Leu  
          275                 280                 285  
 Lys Lys Asp Leu Glu Ser Ala Asn Leu Thr Ala Asn Gln His Ser Asp  
   290                 295                 300  
 Val Ile Cys Gln Ser Glu Pro Asp Asp Ser Phe Pro Ser Ser Gly Ser  
  305                 310                 315                 320  
 Val Ser Leu Tyr Glu Val Glu Arg Cys Gln Gln Leu Ser Ala Thr Ile  
          325                 330                 335

Leu Thr Asp His Gln Tyr Leu Glu Arg Thr Pro Leu Cys Ala Ile Leu  
 340 345 350  
 Lys Gln Lys Ala Pro Gln Gln Tyr Arg Ile Arg Ala Lys Leu Arg Ser  
 355 360 365  
 Tyr Lys Pro Arg Arg Leu Phe Gln Ser Val Lys Leu His Cys Pro Lys  
 370 375 380  
 Cys His Leu Leu Gln Glu Val Pro His Glu Gly Asp Leu Asp Ile Ile  
 385 390 395 400  
 Phe Gln Asp Gly Ala Thr Lys Thr Pro Val Val Lys Leu Gln Asn Thr  
 405 410 415  
 Ser Leu Tyr Asp Ser Lys Ile Trp Thr Thr Lys Asn Gln Lys Gly Arg  
 420 425 430  
 Lys Val Ala Val His Phe Val Lys Asn Asn Gly Ile Leu Pro Leu Ser  
 435 440 445  
 Asn Glu Cys Leu Leu Leu Ile Glu Gly Gly Thr Leu Ser Glu Ile Cys  
 450 455 460  
 Lys Leu Ser Asn Lys Phe Asn Ser Val Ile Pro Val Arg Ser Gly His  
 465 470 475 480  
 Glu Asp Leu Glu Leu Leu Asp Leu Ser Ala Pro Phe Leu Ile Gln Gly  
 485 490 495  
 Thr Ile His His Tyr Gly Cys Lys Gln Cys Ser Ser Leu Arg Ser Ile  
 500 505 510  
 Gln Asn Leu Asn Ser Leu Val Asp Lys Thr Ser Trp Ile Pro Ser Ser  
 515 520 525  
 Val Ala Glu Ala Leu Gly Ile Val Pro Leu Gln Tyr Val Phe Val Met  
 530 535 540  
 Thr Phe Thr Leu Asp Asp Gly Thr Gly Val Leu Glu Ala Tyr Leu Met  
 545 550 555 560  
 Asp Ser Asp Lys Phe Phe Gln Ile Pro Ala Ser Glu Val Leu Met Asp  
 565 570 575  
 Asp Asp Leu Gln Lys Ser Val Asp Met Ile Met Asp Met Phe Cys Pro  
 580 585 590  
 Pro Gly Ile Lys Ile Asp Ala Tyr Pro Trp Leu Glu Cys Phe Ile Lys  
 595 600 605  
 Ser Tyr Asn Val Thr Asn Gly Thr Asp Asn Gln Ile Cys Tyr Gln Ile  
 610 615 620  
 Phe Asp Thr Thr Val Ala Glu Asp Val Ile  
 625 630

<210> 14  
 <211> 1298  
 <212> DNA  
 <213> Homo sapiens

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 actgattatt gtcagttgt aactattgtg gaccagacaa atgtaaaact aacttgacctg 180  
 ctcttttagtg gaaactatga agcccttcca ataatttata aaaatggaga tattgttcgc 240  
 tttcacaggc tgaagattca agtatataaa aaggagactc agggatcac cagctctggc 300  
 tttgcatctt tgacgtttga gggaactttg ggagccccta tcataacctg cacttcaagc 360  
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 ctaaagggtat gggatggcac caggacacca tttccatctt ggagagtctt aatacaagac 600  
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 cagcattcag atgttatctg tcaatcagaa cctgacgaca gctttccaaa tggagtctcg 960  
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 cattgccta aatgtcattt gctgcaagaa gttccaca 1298

<210> 15  
 <211> 340  
 <212> PRT  
 <213> Homo sapiens

<400> 15  
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 Leu Lys Gly Gly Thr Ile Val Asn Val Tyr Gly Val Val Lys Phe Phe  
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 Lys Pro Pro Tyr Leu Ser Lys Gly Thr Asp Tyr Cys Ser Val Val Thr  
 35 40 45  
 Ile Val Asp Gln Thr Asn Val Lys Leu Thr Cys Leu Leu Phe Ser Gly  
 50 55 60  
 Asn Tyr Glu Ala Leu Pro Ile Ile Tyr Lys Asn Gly Asp Ile Val Arg  
 65 70 75 80  
 Phe His Arg Leu Lys Ile Gln Val Tyr Lys Lys Glu Thr Gln Gly Ile  
 85 90 95  
 Thr Ser Ser Gly Phe Ala Ser Leu Thr Phe Glu Gly Thr Leu Gly Ala  
 100 105 110

Pro Ile Ile Pro Arg Thr Ser Ser Lys Tyr Phe Asn Phe Thr Thr Glu  
           115                          120                          125  
 Asp His Lys Met Val Glu Ala Leu Arg Val Trp Ala Ser Thr His Met  
           130                          135                          140  
 Ser Pro Ser Trp Thr Leu Leu Lys Leu Cys Asp Val Gln Pro Met Gln  
           145                          150                          155                          160  
 Tyr Phe Asp Leu Thr Cys Gln Leu Leu Gly Lys Ala Glu Val Asp Gly  
                           165                          170                          175  
 Ala Ser Phe Leu Leu Lys Val Trp Asp Gly Thr Arg Thr Pro Phe Pro  
                           180                          185                          190  
 Ser Trp Arg Val Leu Ile Gln Asp Leu Val Leu Glu Gly Asp Leu Ser  
           195                          200                          205  
 His Ile His Arg Leu Gln Asn Leu Thr Ile Asp Ile Leu Val Tyr Asp  
           210                          215                          220  
 Asn His Val His Val Ala Arg Ser Leu Lys Val Gly Ser Phe Leu Arg  
           225                          230                          235                          240  
 Ile Tyr Ser Leu His Thr Lys Leu Gln Ser Met Asn Ser Glu Asn Gln  
                           245                          250                          255  
 Thr Met Leu Ser Leu Glu Phe His Leu His Gly Gly Thr Ser Tyr Gly  
           260                          265                          270  
 Arg Gly Ile Arg Val Leu Pro Glu Ser Asn Ser Asp Val Asp Gln Leu  
           275                          280                          285  
 Lys Lys Asp Leu Glu Ser Ala Asn Leu Thr Ala Asn Gln His Ser Asp  
           290                          295                          300  
 Val Ile Cys Gln Ser Glu Pro Asp Asp Ser Phe Pro Asn Gly Val Ser  
           305                          310                          315                          320  
 Leu Arg Pro Pro Gly Trp Ser Ser Val Ala Arg Ser Arg Leu Ile Ala  
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&lt;210&gt; 16

&lt;211&gt; 1816

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 16

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<210> 17

<211> 518

<212> PRT

<213> Homo sapiens

<400> 17

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Leu Lys Gly Gly Thr Ile Val Asn Val Tyr Gly Val Val Lys Phe Phe
                20                      25                      30

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Lys Pro Pro Tyr Leu Ser Lys Gly Thr Asp Tyr Cys Ser Val Val Thr
    35                      40                      45

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Ile Val Asp Gln Thr Asn Val Lys Leu Thr Cys Leu Leu Phe Ser Gly
    50                      55                      60

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Asn Tyr Glu Ala Leu Pro Ile Ile Tyr Lys Asn Gly Asp Ile Val Arg
    65                      70                      75                      80

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Phe His Arg Leu Lys Ile Gln Val Tyr Lys Lys Glu Thr Gln Gly Ile
                85                      90                      95

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Thr Ser Ser Gly Phe Ala Ser Leu Thr Phe Glu Gly Thr Leu Gly Ala
    100                      105                      110

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Pro Ile Ile Pro Arg Thr Ser Ser Lys Tyr Phe Asn Phe Thr Thr Glu
    115                      120                      125

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Asp His Lys Met Val Glu Ala Leu Arg Val Trp Ala Ser Thr His Met  
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 Ser Pro Ser Trp Thr Leu Leu Lys Leu Cys Asp Val Gln Pro Met Gln  
 145 150 155 160  
 Tyr Phe Asp Leu Thr Cys Gln Leu Leu Gly Lys Ala Glu Val Asp Gly  
 165 170 175  
 Ala Ser Phe Leu Leu Lys Val Trp Asp Gly Thr Arg Thr Pro Phe Pro  
 180 185 190  
 Ser Trp Arg Val Leu Ile Gln Asp Leu Val Leu Glu Gly Asp Leu Ser  
 195 200 205  
 His Ile His Arg Leu Gln Asn Leu Thr Ile Asp Ile Leu Val Tyr Asp  
 210 215 220  
 Asn His Val His Val Ala Arg Ser Leu Lys Val Gly Ser Phe Leu Arg  
 225 230 235 240  
 Ile Tyr Ser Leu His Thr Lys Leu Gln Ser Met Asn Ser Glu Asn Gln  
 245 250 255  
 Thr Met Leu Ser Leu Glu Phe His Leu His Gly Gly Thr Ser Tyr Gly  
 260 265 270  
 Arg Gly Ile Arg Val Leu Pro Glu Ser Asn Ser Asp Val Asp Gln Leu  
 275 280 285  
 Lys Lys Asp Leu Glu Ser Ala Asn Leu Thr Ala Asn Gln His Ser Asp  
 290 295 300  
 Val Ile Cys Gln Ser Glu Pro Asp Asp Ser Phe Pro Ser Ser Gly Ser  
 305 310 315 320  
 Val Ser Leu Tyr Glu Val Glu Arg Cys Gln Gln Leu Ser Ala Thr Ile  
 325 330 335  
 Leu Thr Asp His Gln Tyr Leu Glu Arg Thr Pro Leu Cys Ala Ile Leu  
 340 345 350  
 Lys Gln Lys Ala Pro Gln Gln Tyr Arg Ile Arg Ala Lys Leu Arg Ser  
 355 360 365  
 Tyr Lys Pro Arg Arg Leu Phe Gln Ser Val Lys Leu His Cys Pro Lys  
 370 375 380  
 Cys His Leu Leu Gln Glu Val Pro His Glu Gly Asp Leu Asp Ile Ile  
 385 390 395 400  
 Phe Gln Asp Gly Ala Thr Lys Thr Pro Asp Val Lys Leu Gln Asn Thr  
 405 410 415  
 Ser Leu Tyr Asp Ser Lys Ile Trp Thr Thr Lys Asn Gln Lys Gly Arg  
 420 425 430

Lys Val Ala Val His Phe Val Lys Asn Asn Gly Ile Leu Pro Leu Ser  
 435 440 445

Asn Glu Cys Leu Leu Leu Ile Glu Gly Gly Thr Leu Ser Glu Ile Cys  
 450 455 460

Lys Leu Ser Asn Lys Phe Asn Ser Val Ile Pro Val Arg Ser Gly His  
 465 470 475 480

Glu Asp Leu Glu Leu Leu Asp Leu Ser Ala Pro Phe Leu Ile Gln Gly  
 485 490 495

Thr Ile His His Tyr Gly Thr Gly Tyr Cys Thr Pro Pro Ile Cys Val  
 500 505 510

Cys Tyr Asp Leu Tyr Thr  
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<210> 18

<211> 27377

<212> DNA

<213> Homo sapiens

<400> 18

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tacaaataat actttaataa acatccttga atatatgtac ttccatgttt ttacttctcc 180
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